

## ABSTRACT

The present invention provides rhamnogalacturonan-II (RG-II) and relates to its ability to complex specific multivalent heavy metal cations. In the presence of boric acid, RG-II monomers form dimers that are cross-linked by a borate ester. The yield of such borate ester cross-linked dimers of RG-II is enhanced in the presence of specific heavy metal cations. The present invention further relates to the utility of RG-II in assays for the detection of specific heavy metal contamination; as a reagent useful in the removal of specific heavy metal cations contaminating foods and liquids, for example, fish, wines, etc.; as a pharmaceutical composition useful as an antidote in specific heavy metal cation poisoning; as a treatment for the detoxification of specific heavy metal cations from blood and/or tissues; and in a method of remediation of waters and soils contaminated with specific heavy metal cations.

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